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Amendments to the Claims

## 1. (Currently Amended) A vehicle comprising:

an oxides-of-nitrogen (~~"NO<sub>x</sub>"~~, hereinafter) (NO<sub>x</sub>) trap assembly having an adsorption material which is regenerated with a mixture including hydrogen and carbon monoxide (~~"syngas"~~, hereinafter) (syngas);

5 a fuel cell power plant receiving air at an air inlet, receiving a hydrogen rich fuel mixture at a fuel inlet, and having humidified air exhausting from an air exit, said fuel cell power plant providing electrical power to operate auxiliary apparatus in said vehicle;

an internal combustion engine system which operates on engine fuel and  
10 provides engine exhaust having NO<sub>x</sub> therein to said NO<sub>x</sub> trap assembly;

means for generating syngas from said engine exhaust, said engine fuel and humidified air exhausting from said fuel cell power plant, in an amount in excess of that required to regenerate adsorption material in said NO<sub>x</sub> trap assembly; and

a palladium membrane separator receiving at its input syngas[*l*,*l*] and (a)  
15 providing [*lat*] syngas from a main output thereof ~~syngas~~ for use in regenerating said adsorption material, and (b) providing a hydrogen rich gas mixture from an additional output of said separator to said fuel inlet of said fuel cell stack ~~from an additional output of said separator, a hydrogen rich gas mixture.~~

## 2. (Currently Amended) A vehicle according to claim 1 wherein:

said palladium membrane separator has membranes that may leak some syngas including CO from said additional output; and further comprising:

a methanator, the hydrogen rich gas mixture from said additional output of  
5 said palladium membrane separator being applied to said methanator[*l*,*l*] wherein the CO is converted to CH<sub>4</sub>, the output of said methanator being applied to the fuel inlet of said fuel cell stack.

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3. (Currently Amended) A vehicle according to claim 1 further comprising:

5 a ~~catalyst~~ catalyst, selected from a water/gas shift reactor catalyst and a steam reformer reactor ~~catalyst~~ catalyst, disposed between the output of said means for generating syngas and the membranes of said palladium membrane separator, whereby said amount of syngas is provided partly by said means for generating syngas and partly by said catalyst.

4. (Currently Amended) A vehicle according to claim 1, further comprising:

5 means for diverting syngas that is not utilized to regenerate the NOx trap catalyst from said main output of said separator, ~~that is not utilized to regenerate the NOx trap catalyst~~, to either (a) [[to]] the engine or (b) [[to]] a burner-driven air conditioning system.